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Factors Influencing Clinicians' Attitudes about Aggression in Australian Acute Old Age Psychiatry Inpatient Units: A Cross Sectional Survey Design

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Abstract

Patient aggression occurs in old age psychiatry and is problematic. The aim of this study is to identify the factors that influence clinicians' attitudes toward aggression in old age psychiatry. Eighty-five individuals, comprising nurses (n = 75) and medical and allied health staff (n = 10), completed the questionnaire. The results show that gender, profession, and work experience do not affect attitudes toward aggression. A low score indicated agreement with an attitudinal statement. However, younger age, better higher level of completed education, and place of work increased the likelihood of participants endorsing the questionnaire's attitudinal statements about aggression. The findings suggest clinicians' attitudes may affect the way they attempt to prevent and manage aggression.

Introduction

Many countries have ageing populations, and the proportion of elderly people with mental illness and the demand for places in inpatient psychiatric units are likely to increase. Aggression is common in elderly people with mental illness and is mainly linked with confusion and dementia (Chaplin, Mc-George, Hinchcliffe, & Shinkwin, 2008). Most psychiatric literature on aggression has focused on adult psychiatry, but considerably less attention has been given to the prevention and management of this behaviour in old age psychiatric patients in inpatient settings (Minnick, Mion, Johnson, Catrambone, C., & Leipzig, 2007; Moore & Haralambous, 2007). Staff attitudes toward patient aggression impact on the ways they strive to prevent and manage this behaviour (Needham et al., 2005). This association, highlighting the influence of attitudes on behaviour, is consistent with Ajzen's (1991) Theory of Planned Behaviour. Put simply, negative staff attitudes towards aggression can adversely affect its prevention and management (Jansen, Dassen, Johannes, Burgerhof,

& Middel, 2006; Jansen, Middel, Dassen, & Reijneveld, 2006). In order to develop approaches to prevent and manage aggression and, in so doing, provide a safer environment for patients, relatives, and staff, it is necessary to ascertain the types of attitudes mental health professionals, such as nurses, doctors, and allied health staff, hold about aggressive patients.

Study Background

"Aggressive behaviour is an overt act, involving the delivery of noxious stimuli to (but not necessarily aimed at) another organism, object or self, which is clearly not accidental" (Patel & Hope, 1992, p. 212). In this definition, aggression is unpleasant behaviour directed to various recipients; it can take various forms and is not accidental. The question of intent also is relevant here because most aggression carried out by elderly patients with organic mental illness is unintentional (Royal College of Psychiatrists' Centre for Quality Improvement, 2008). Aggression is challenging and is contrary to the recovery of patients, the well-being of relatives, and the safety of staff. Staff caring for elderly people with organic mental illness in inpatient settings are more likely to be the recipients of aggression than those working in other inpatient environments (Royal College of Psychiatrists' Centre for Quality Improvement, 2008). Nurses, more than other patients or other clinical and non-clinical staff, are likely to be the recipients of aggression in these settings (Chaplin et al., 2008; Cornaggia, Beghi, Pavone, & Barale, 2011; Royal College of Psychiatrists' Centre for Quality Improvement, 2008). Fortunately, such aggression rarely results in severe injury (Almvik, Rasmussen, & Woods, 2006; Chaplin et al., 2008).

Some approaches to managing patient aggression, such as restraint (the limitation of a person's freedom through physical, chemical, environmental, or psychological means) and seclusion (confinement alone of an individual in a locked room) are harmful to elderly patients and their use is controversial (Mohr, Petti, & Mohr, 2003; Moylan, 2009; Patterson & Grant, 2003). Consequently, there has been a worldwide move toward the reduction or elimination of restraint and seclusion in psychiatric care (Department of Health, 2008; Te Pou, 2008). However, there remain variations in use and attitudes toward these measures (Bowers et al., 2007), and the need for organisational and philosophical shifts in restraint reduction efforts has been identified (Ashcraft & Anthony, 2008). Research into restraint has

focused on outcomes of the use of restraint measures, in particular the adverse physical and psychological implications for patients. A Cochrane Review of physical restraint, by Möhler et al. (2011), concluded that restraint can have serious harmful physical and psychological effects on elderly patients. Physically restraining a patient also can culminate in injury to patients and staff involved in the procedure (Lancaster, Whittington, Lane, Riley, & Meehan, 2008; Stubbs, 2009).

The attitudes of staff toward aggression are a key influence to managing this behaviour. Pulsford et al. (2011), in a United Kingdom survey of staff attitudes toward older aggressive people with dementia in residential care settings, reported that aggressive behaviour was viewed more so as an interpersonal phenomenon attributable to situational events (e.g., unfavourable interactions with others or the environment of care), and staff responses to this behaviour were predominantly informed by a person-centred approach (e.g., de-escalation) than containment methods (e.g., medication, restraint, and seclusion). However, a survey of aggression in a high secure hospital in the United Kingdom, by Pulsford et al. (2013) reported that staff held mixed attitudes about the causes and management of patient aggression. Likewise, a survey of staff attitudes toward aggression in 27 dementia-related facilities/organisations in Japan, by Nakahira et al. (2009), found that staff with negative attitudes toward aggressive patients were more likely to use physical and chemical restraint than those with positive attitudes. Similar findings also have been reported in a United Kingdom survey (Duxbury & Whittington, 2005) of staff attitudes about the causes and management of aggression in an acute psychiatric inpatient unit. Duxbury and Whittington reported that respondents tended to regard factors internal to the aggressive patient (e.g., their illness or personality) as more influential. As a consequence, containment was more likely to be used than person-centred approaches. Overall, little research has been conducted into the attitudes of staff toward the causes and management of patient aggression in old age psychiatric patients. Moreover, of studies conducted in a range of settings, the evidence indicates that staff attitudes about this behaviour are complex.

Ecological Theory of the Causes of Aggression

The causes of aggression are often complex and occur at different levels—individual, relationship, social, cultural, and environmental (Krug, Mercy, Dahlberg, & Zwi, 2002). Aggression may be due to psychosocial-environmental influences; the interaction of

patients, relatives, and staff; the culture of the inpatient setting; or some combination of these (Hamrin, Iennaco, & Olsen, 2009). Bronfenbrenner's (2005) bio-ecological systems theory, in which he delineated five interrelated systems (summarised in Table 1), can be extrapolated to help shed light on the multilayered influences on aggression in acute old age psychiatry inpatient settings.

The first system is the microsystem, which incorporates the patient's interactions in the immediate setting (e.g., restricting patients' freedom in the inpatient unit (Papadopoulos et al., 2012) with other people (e.g., incapacity of elderly patients with dementia to communicate effectively (Duxbury, Pulsford, Hadi, & Sykes, 2013) and inadequate staff-to-patient communication (Duxbury et al., 2013; Pulsford et al., 2011), and with symbols and language (the semiotic system). Influences at this level include, for instance, service user characteristics (e.g., sociodemographic, psychological, personality and biological factors, symptomatology, and cognitive functioning) and his or her interactions with other patients, clinicians, and relatives.

The second system is the mesosystem, in which two or more microsystems interact. This can include, for instance, the interaction of mental health professional-related influences (e.g., low level of education [Cunningham, Connor, Miller, & Melloin, 2003], work experience, position within the organisation, and psychological issues such as burnout) with the social climate of the unit (e.g., poor workplace culture, weak clinical leadership [National Institute for Health and Clinical Excellence, 2011]), and patient-related characteristics.

The third system is the exosystem, an extension of the mesosystem, where external influences, such as the policies of the health care agency and government health policies, affect aggression indirectly.

The fourth system is the macrosystem, where wider, broader, socio-cultural influences affect whether aggression is discouraged or accepted. This includes things such as societal norms, beliefs, and traditions about this behaviour.

Finally, the chronosystem, the fifth stage, refers to the evolution of external environmental systems and events over time that influence the individual. This system includes the influence of socio-historical factors, life experiences, and transitions in a person's life.

The background to this study was concern about varying levels of patient aggression in three old age psychiatry units. One of the factors associated with the prevention and management of patient aggression is the attitude of staff towards this form of challenging behaviour (Jansen, Dassen et al., 2006; Jansen, Middel et al., 2006). The aim of the study, therefore, is to examine the factors that influence the attitudes of mental health professionals towards the causes and management of aggression in old age psychiatry inpatient units. It is important to understand these factors because they may influence the steps these professionals take to prevent and manage this form of behaviour: attitudes, prevention, and management are interlinked (Jansen, Dassen et al., 2006; Jansen, Middel et al., 2006).

[Insert Table 1]

METHOD

Design

A cross-sectional survey design was used, incorporating a structured questionnaire.

Sample and Setting

A convenience sample of mental health professionals was recruited from three acute old age psychiatry inpatient units for elderly people aged 65 years and over, and their associated community outreach teams, in Melbourne, Australia. The units are situated within the same public old age psychiatry service, although each is located in a different geographical location. Each unit provides mainly single-room accommodations for 15–20 patients, and each has a shared recreational centre and a dining room and garden. Patients are aged 65 years and above, are usually admitted from their own homes or residential care, and have a range of organic, functional, and age-related psychiatric disorders. They are then discharged back to these locations. The frequency of patient aggression varied across the three units, as did the layout of the units. Nursing (registered and enrolled), medical, and allied health staff provide care, and the staff-to-patient ratios are similar in each unit.

The inclusion criteria for the study comprised mental health professionals (i.e., registered and enrolled nurses, psychiatrists, psychologists, social workers, and occupational therapists), working on day shifts in the units. The exclusion criterion was staff working at

night and at weekends. This criterion was added because of limited funding for the project; however, most staff worked on shift rotation.

Kraemer and Thiemann's (1987) convention was used to determine sample size for statistics assessing differences between groups; therefore, a minimum of 14 participants per group, assuming at least three groups and a moderate effect size of .50, provided a power of approximately 80%.

Data Collection

Data were collected using the Management of Aggression and Violence Attitude Scale (MAVAS; Duxbury, 2003; Duxbury, Hahn, Needham,&Pulsford, 2008), which assesses attitudes toward the causes and management of aggression. It contained 30 items (originally 27), on a four-point Likert scale, ranging from one (strongly agree) to four (strongly disagree). A low score signifies endorsement of the attitudinal item (e.g., Patients are aggressive because of the environment they are in) whereas a high score indicates disagreement (e.g., Patients are aggressive because they are ill). The Scale has a strong four-factor structure (Duxbury, 2003): (1) Internal (5 items): Aggression is attributable to factors within the aggressive person (e.g., personality or mental illness); (2) External (3 items): Aggression is due to influences in the person's physical or social environment (e.g., physical layout of ward, or the way in which the ward is managed); (3) Situational/interactional (5 items): Aggression is caused by influences in the immediate environment, such as the manner in which staff interact with patients; and (4) Methods of managing aggression (14 items): How is aggression handled (e.g., the use of medications, restraint, seclusion). With the addition of three items, a fifth factor—cultural/gender—has been identified by the author of the instrument. This relates to the influence of culture and gender in causing, and the management of, this behaviour.

The internal reliability of the MAVAS has been recognised in several studies (Duxbury, 2003; Duxbury et al., 2008; Hahn, Needham, Abderhalden, Duxbury, & Halfens, 2006). In the present study, the Cronbach's alpha was 0.8; ideally, this should be above 0.7 (DeVellis, 2003). Furthermore, the factor structure of the MAVAS aligns well with Bronfenbrenner's (2005) bioecological systems theory; in particular, with the microsystem, the mesosystem, and the exosystem. Socio-demographic data collection occurred in a separate section of the

questionnaire, and captured gender, age, occupation, education, place of work, and duration of employment in the psychiatric system.

Ethics

Ethical approval to carry out the study was obtained from Melbourne Health Research and Ethics Committee. The researchers provided written information and verbal explanations about the study and distributed the questionnaire. Voluntary participation was emphasised. Return of questionnaire was interpreted as consent. In order to maintain confidentiality, no identifiable information was obtained from participants, and small numbers of respondents from a particular discipline were grouped into a larger cluster of disciplines.

Data Analysis

Data analyses were undertaken using the R environment for statistical computing and graphics (R Development Core Team, 2011). Descriptive statistics were used to analyse the sociodemographic characteristics of respondents and responses to the causes and management of aggression. The independent samples t-test was used to assess differences between gender and MAVAS scores. One-way between-groups analyses of variance (ANOVA) were conducted to explore the relationship between most socio-demographic variables and MAVAS scores. When significant differences were detected, and to avoid Type 1 error, post-hoc comparisons were carried out, using Bonferroni adjustment, to set more stringent conditions for significance (Pallant, 2011). Effect sizes (or strength of association), which signify the amount of variance in the dependent variable that can be explained by the independent variable (Pallant, 2011; Tabachnick & Fidell, 2007), were assessed based on Cohen's *d* (standardised mean difference) (Cohen, 1992) criteria: 2 equates to a small effect, .5 a medium effect, and .8 represents a large effect. The level of statistical significance was defined as $p < 0.05$ and all tests were two-tailed.

RESULTS

Socio-Demographic Characteristics of Participants

Ninety mental health professionals were invited to participate and, of these, 85 returned the questionnaire. This equates to 78% of the total amount of staff working in the three units. Unit 3 ($n = 37$ participants, 43.5%) had the highest level of participation, followed by

Units 1 ($n = 26$ participants, 30.6%) and 2 ($n = 22$ participants, 25.9%) respectively. Nearly two-thirds of respondents were female ($n = 56$, 65.9%). The mean age of respondents was 43 years, ranging from 24 to 62 years (Mean = 43.1; $SD = 11.3$). The mean length of time participants worked in the psychiatric system was almost 15 years, ranging from 1 to 40 years (Mean = 14.6; $SD = 10.8$). Considerably more nurses (Registered nurses: $n = 52$, 61.1%; Enrolled nurses: $n = 23$, 27.1%) than medical and allied health staff ($n = 10$, 11.8%) participated in the study. However, this is consistent with the relative proportions of these staff working in the units. Regarding the highest level of completed education, approximately two-thirds of participants had finished tertiary education ($n = 53$, 63.1%), almost one-sixth completed technical and further education (TAFE) ($n = 15$, 17.9%) (for example, TAFE students complete apprenticeships and enrolled nursing courses), and almost one-fifth finished only high school ($n = 16$, 19%).

Gender

Independent samples t-test was conducted to compare the overall and subscale MAVAS scores for females and males. There were no statistically significant differences in scores between female and male respondents for the overall MAVAS ($p = 0.22$), or for any of its subscales ($p = 0.07$ to $p = 0.73$). Generally, mean and standard deviation scores indicated that both groups tended to agree with the MAVAS statements about the causes and management of aggression (Females: $M = 2.3$; $SD = 0.3$; Males: $M = 2.2$; $SD = 0.3$).

Age

A one-way between-groups ANOVA was conducted to explore the relationship between age and MAVAS scores for the causes and management of aggression. Respondents were divided into four age groups (< 30 years of age, 30–39 years of age, 40–49 years of age, and 50 years of age and older). There was a statistically significant difference for the overall MAVAS ($F = 3.62$, $p = 0.017$) and the Management subscale ($F = 4.38$, $p = 0.007$). Despite reaching statistical significance, the actual difference in the mean scores between the age groups for the MAVAS and this subscale was small ($\eta^2 = 0.12$ and 0.15 , respectively). Post-hoc comparisons (Table 2) indicated a statistically significant ($p < .05$) higher mean score in the MAVAS for respondents older than 50 years ($M = 2.3$; $SD = 0.2$) compared to those aged 30 to 39 years ($M = 2.0$; $SD = 0.3$), and a statistically significant higher mean score in the

Management subscale for those aged 40–49 years ($M = 2.4$; $SD = 0.3$) compared to respondents aged 30–39 years ($M = 2.1$; $SD = 0.3$). There were no statistically significant differences in the mean MAVAS or Management subscale scores between any of the other age groups ($p > 0.05$). Generally, these findings suggest that older respondents, in particular those aged 50 years and over, were less likely than younger respondents to agree with the MAVAS statements about the causes and management of aggression.

[Insert Table 2]

Education

A one-way between-groups ANOVA was carried out to examine the relationship between highest level of completed education (Tertiary, TAFE, and high school) and MAVAS scores for the causes and management of aggression. There was a statistically significant effect for the overall MAVAS ($F = 9.91$, $p = 0.002$, $\eta^2 = 0.11$) and the subscales External ($F = 8.34$, $p = 0.005$, $\eta^2 = 0.09$), Situational/Interactional ($F = 11.61$, $p = 0.001$, $\eta^2 = 0.12$), and Management ($F = 10.06$, $p = 0.002$, $\eta^2 = 0.11$); however, the difference in the mean scores of the groups for the overall MAVAS and the three subscales was small (Table 3).

Post-hoc comparisons (Table 4) revealed that for the overall MAVAS and the External and Management subscales, TAFE and tertiary-educated respondents provided statistically significant lower mean scores than high school only-educated respondents ($p < .05$), but there were no statistically significant differences in the mean scores of TAFE- and tertiary-educated respondents ($p > .05$). For the Situational/Interactional subscale, TAFE ($M = 2.0$; $SD = 0.4$) and tertiary-educated ($M = 2.0$; $SD = 0.5$) respondents gave statistically significant lower mean scores than high school only-educated respondents ($M = 2.5$; $SD = 0.2$, $p < .05$), and tertiary-educated respondents gave statistically significant lower mean scores than TAFE-educated respondents ($p < .05$). Generally, these findings indicate that high school educated respondents— in this instance, a proportion of registered and enrolled nurses ($n=16$)—were less likely than those who had completed TAFE or tertiary education to agree with the MAVAS statements about the causes and management of aggression.

[Insert Table 3]

[Insert Table 4]

Profession and Work Experience in Psychiatric System

Means and standard deviations for overall MAVAS and subscales by profession and by duration of work experience in the psychiatric system were assessed. These indicated that there were no statistically significant differences ($p > 0.05$) among mental health professionals (MAVAS: Registered nurses: $M = 2.3$; $SD = 0.3$; Enrolled nurses: $M = 2.2$; $SD = 0.2$; Medical and allied health: $M = 2.2$; $SD = 0.4$) or by duration of work experience in the psychiatric system (MAVAS: ≤ 4 years: $M = 2.2$; $SD = 0.3$; 5–9 years: $M = 2.2$; $SD = 0.3$; 10–19 years: $M = 2.2$; $SD = 0.3$; 20 or more years: $M = 2.3$; $SD = 0.3$), for the MAVAS or any of the subscales. Generally, these findings suggest that respondents from the different mental health professional groups and with different work experience tended to agree with the MAVAS statements about the causes and management of aggression.

Place of Work

A one-way between-groups ANOVA was conducted to examine the relationship between place of work (Units 1 to 3) and MAVAS scores for the causes and management of aggression. There was a statistically significant difference for the overall MAVAS ($F = 3.334$, $p = 0.041$, $\eta^2 = 0.075$) and for two of the subscales, External ($F = 3.915$, $p = 0.024$, $\eta^2 = 0.087$) and Cultural/Gender ($F = 3.591$, $p = 0.032$, $\eta^2 = 0.081$). However, the actual differences in the mean scores of respondents from the units for the overall MAVAS (Unit 1: $M = 2.2$, $SD = 0.2$; Unit 2: $M = 2.4$, $SD = 0.3$; Unit 3: $M = 2.2$, $SD = 0.4$) and these subscales (External: Unit 1: $M = 1.8$, $SD = 0.5$; Unit 2: $M = 2.3$, $SD = 0.7$; Unit 3: $M = 2.0$, $SD = 0.5$; Cultural/Gender: Unit 1: $M = 1.8$, $SD = 0.6$; Unit 2: $M = 2.3$, $SD = 0.7$; Unit 3: $M = 1.9$, $SD = 0.7$) were small. Post-hoc comparisons (Table 5) showed that Unit 2 respondents had statistically significant higher overall MAVAS scores than Unit 1 ($p < 0.05$) and Unit 3 had statistically significant lower MAVAS scores than Unit 2 respondents ($p < 0.05$), but the results for Unit 3 and Unit 1 were not statistically different ($p > 0.05$). For the External subscale, Unit 2 respondents had higher overall MAVAS scores than Unit 1 ($p < 0.05$), but the other comparisons were not statistically significant ($p > 0.05$). Finally, for the Cultural/Gender subscale, Unit 2 respondent scores were higher than Unit 1 ($p < 0.05$), but the other two comparisons were not statistically significant ($p > 0.05$). Generally, these findings indicate that respondents from Units 1 and 3 were more likely to agree with the overall MAVAS statements about the causes and management of aggression than those

from Unit 2. From an external perspective, respondents from Units 1 and 3 were more likely to perceive environmental factors as an antecedent to aggression than Unit 2 respondents. From a cultural/gender perspective, participants from Units 1 and 3 were more likely to view cultural and gender issues as important considerations with aggression than those from Unit 2.

[Insert Table 5]

DISCUSSION

The findings of our study provide an important understanding of the socio-demographic factors that influence the attitudes of nursing, medical, and allied health staff toward the causes and management of aggression in acute old age psychiatry inpatient units. The findings indicate that age, education, and place of work affect attitudes toward these forms of challenging behaviours. In relation to age, younger participants were more likely to agree with the MAVAS statements than those aged 50 years and over, in particular. There are two potential competing explanations for the influence of age on these attitudes. Younger respondents' attitudes may be attributable to them being less likely to have experienced burnout and aggression than older respondents. This explanation is consistent with Bronfenbrenner's (2005) ecological model, where mesosystem workplace influences, such as burnout, adversely affect attitudes toward aggression. It also is consonant with the finding of the Owen et al. (1998) study of reported episodes of aggression in psychiatric units, where the risk of experiencing aggression was lower in younger staff (under 30 years old) in comparison to their older colleagues. Alternatively, it may be interpreted that other microsystem and mesosystem determinants, such as greater duration of clinical experience, may combine to influence older respondents' attitudes to being less likely to agree with the MAVAS statements about the causes and management of aggression.

The findings show that respondents whose highest level of completed education was tertiary or TAFE were more likely to agree with the MAVAS statements than those with only a high school education. High school-only educated nurses also were more likely to favour the retention of seclusion than respondents educated in tertiary or TAFE settings. The fact that high school was the highest level of completed education for some nursing (registered and enrolled) participants can be explained by these individuals having completed their pre-

registration nursing courses in hospitals prior to the introduction of such programmes in tertiary and TAFE settings. What can be inferred from this significant finding, however, is that the level of prior education has an important influence on the formation of attitudes about the causes and management of aggression and beliefs about whether the practice of seclusion should be discontinued.

Elsewhere, a low level of education has been found to be associated with a higher prevalence of assault (Cunningham et al., 2003). The findings about level of education in this present study also can be interpreted within Bronfenbrenner's (2005) ecological model, where mesosystem clinician-related influences, such as a lower level of education, affect attitudes toward the causes and management of aggression. Extrapolating from these findings, staff who lack psychiatric or aggression management training are more likely to experience these forms of challenging behaviours than those with adequate training (Owen et al., 1998).

The findings of the present study show that, regarding place of employment, respondents from Units 1 and 3 were more likely to agree with the MAVAS statements about the causes and management of aggression than those employed in Unit 2. This suggests that place of employment, such as the nature of the physical environment and the way the organisation reacts to service users' needs, has a key influence on attitudes toward these forms of challenging behaviours (Hamrin et al., 2009). This finding is consistent with studies that report that staff experiences of workplace culture, such as perceived competence and job satisfaction, are inversely related to aggression (Arnetz, Arnetz, & Soderman, 1998; Morrison, 1998). This finding also can be understood within Bronfenbrenner's (2005) ecological model, where a complex range of mesosystem and macrosystem (e.g., organisational and government public health policies) influences attitudes toward the causes and management of aggression. In particular, mesosystem influences, such as the workplace culture and style of leadership within the units (National Institute for Health and Clinical Excellence, 2011), may have influenced respondents from Units 1 and 3 to endorse the MAVAS attitudinal items more so than those in Unit 2.

Microsystem influences, such as the way clinicians interact with patients, also may help explain differences in the way respondents from Units 1 and 3 perceive aggression in comparison to those in Unit 2. In addition, mesosystem influences, such as the social

climates of the units, can help account for the differences between respondents from Units 1 and 2. Ultimately, however, it is the complex interaction of these different systems of influence that can help shed light on why staff respondents from Unit 2 were less likely to agree with the MAVAS statements about the causes and management of aggression than those in the other two units. Support for the influence of microsystem and mesosystem factors—such as the physical characteristics of the unit, rules and management strategies, and the behaviour of staff—on attitudes toward aggression has been highlighted by Daffern and Howells (2002). Likewise, Scanlan (2010), in a review of literature on measures used to reduce seclusion and restraint, reported that strong local leadership, engagement of clinical staff, and changes in inpatient programmes are key influences that affect these outcomes favourably in inpatient units.

LIMITATIONS

This cross-sectional survey design had two main limitations that should be taken into consideration when evaluating the results. The limitations of a non-probability sample, and restricting recruitment to within certain timeframes should be noted; and although the sample was obtained from three units located in separate geographical sites within the same service, this restricts the ability to infer from this sample to the broader population of mental health professionals practising in other old age psychiatry settings. A future study should aim to recruit a probability sample; recruit participants throughout the 24-hour, 7-day spectrum; and include participants from more than one health service. Finally, the study would have benefitted from the inclusion of patients. However, despite the fact that ethical approval was obtained to recruit present and former inpatients, it became clear at initial recruitment that they were not well enough to give informed consent.

CONCLUSION AND CLINICAL IMPLICATIONS

Aggression in acute old age psychiatry inpatient settings is demanding and conflicts with the establishment of an environment that is safe and therapeutic for patients and relatives and that offers safe working conditions for staff. Our study provides an important insight into the factors that influence the attitudes of mental health professionals—mainly nurses—toward the causes and management of aggression. Attitudes toward aggression may affect the way these professionals attempt to prevent and manage aggressive behaviour, and

measures to prevent and manage aggression are interlinked (Jansen, Dassen et al., 2006; Jansen, Middel et al., 2006). Moreover, Bronfenbrenner's (2005) bio-ecological model sheds some explanatory light on these factors.

Our findings have implications for the way these types of challenging behaviours are addressed in acute old age psychiatry inpatient settings and for future research. First, they contribute to the limited body of nursing knowledge, in particular about factors influencing attitudes toward these behaviours in these settings, and shed light on issues associated with the causes and management of aggression. This is noteworthy because most countries are faced with ageing populations and, as a consequence, a likely increase in demand for such old age units. Second, when recruiting staff, consideration should be given to asking specific questions about the prevention and management of aggression and being aware of the benefits of having younger nurses on teams. Additionally, undergraduate nursing students should receive evidence-based theoretical preparation coupled with supportive clinical experience in acute old age psychiatry settings. Furthermore, mental health professionals should receive regular evidence-based continuing education about the prevention and management of aggression along with accessible support from staff who are expert in dealing with these forms of challenging behaviours. Finally, more research is needed into the social climate of units to ascertain the particular features of units, including their governance, that affect attitudes toward this type of challenging behaviour.

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REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 170–211.
- Almvik, R., Rasmussen, K., & Woods, P. (2006). Challenging behaviour in the elderly—Monitoring violent incidents. [Research Support, Non-U.S. Gov't]. *International Journal of Geriatric Psychiatry*, 21(4), 368–374. doi: 10.1002/gps.1474

Arnetz, J. E., Arnetz, B. B., & Soderman, E. (1998). Violence toward health care workers. Prevalence and incidence at a large, regional hospital in Sweden. *American Association of Occupational Health Nurses*, 46(3), 107–114.

Ashcraft, L., & Anthony, W. (2008). Eliminating seclusion and restraint in recovery-oriented crisis services. *Psychiatric Services*, 59, 1198–1202. doi: 10.1176/appi.ps.59.10.1198

Bowers, L., van der Werf, B., Vokkolainen, A., Muir-Cochrane, E., Allan, T., & Alexander, J. (2007). International variation in containment measures for disturbed psychiatric inpatients: A comparative questionnaire survey. [Comparative Study]. *International Journal of Nursing Studies*, 44(3), 357–364. doi: 10.1016/j.ijnurstu.2006.01.005

Bronfenbrenner, U. (2005). *Making human beings human: Bioecological perspectives on human development*. Thousand Oaks, CA: Sage.

Chaplin, R., McGeorge, M., Hinchcliffe, G., & Shinkwin, L. (2008). Aggression on psychiatric inpatient units for older adults and adults of working age. *International Journal of Geriatric Psychiatry*, 23(8), 874–876. doi: 10.1002/gps.1975

Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155–159.

Cornaggia, C. M., Beghi, M., Pavone, F., & Barale, F. (2011). Aggression in psychiatry wards: A systematic review. *Psychiatry Research*, 189(1), 10–20. doi: 10.1016/j.psychres.2010.12.024S0165-1781(10)00792-4 [pii]

Cunningham, J., Connor, D. F., Miller, K. E., & Melloin, R. H. (2003). Staff survey results and characteristics that predict assault and injury to personnel working in mental health facilities. *Aggressive Behavior*, 29, 31–40.

Daffern, M., & Howells, K. (2002). Psychiatric inpatient aggression: A review of structural and functional assessment approaches. *Aggression and Violent Behavior*, 7, 477–497.

Department of Health. (2008). *Code of Practice: Mental Health Act 1983*. London, UK: TSO.

DeVellis, R. F. (2003). *Scale development: Theory and applications* (2nd ed.). Thousand Oaks, CA: Sage.

Duxbury, J. (2003). Testing a new tool: The Management of Aggression and Violence Attitude Scale (MAVAS). *Nurse Researcher*, 10(4), 39–52.

Duxbury, J., Hahn, S., Needham, I., & Pulsford, D. (2008). The Management of Aggression and Violence Attitude Scale (MAVAS): A cross-national comparative study. *Journal of Advanced Nursing*, 62(5), 596–606. doi: JAN4629 [pii]10.1111/j.1365-2648.2008.04629.x

Duxbury, J., Pulsford, D., Hadi, M., & Sykes, S. (2013). Staff and relatives' perspectives on the aggressive behaviour of older people with dementia in residential care: A qualitative study. *Journal of Psychiatric and Mental Health Nursing*, 20(9), 792–800. doi: 10.1111/jpm.12018

Duxbury, J., & Whittington, R. (2005). Causes and management of patient aggression and violence: Staff and patient perspectives. *Journal of Advanced Nursing*, 50(5), 469–478. doi: JAN3426 [pii]10.1111/j.1365-2648.2005.03426.x

Hahn, S., Needham, I., Abderhalden, C., Duxbury, J. A., & Halfens, R. J. (2006). The effect of a training course on mental health nurses' attitudes on the reasons of patient aggression and its management. *Journal of Psychiatric and Mental Health Nursing*, 13(2), 197–204. doi: JPM941 [pii]10.1111/j.1365-2850.2006.00941.x

Hamrin, V., Iennaco, J., & Olsen, D. (2009). A review of ecological factors affecting inpatient psychiatric unit violence: Implications for relational and unit cultural improvements. *Issues in Mental Health Nursing*, 30(4), 214–226. doi: 10.1080/01612840802701083910379745 [pii]

Jansen, G. J., Dassen, T. W. N., Johannes, G. M., Burgerhof, G. M., & Middel, B. (2006). Psychiatric nurses' attitudes towards inpatient aggression: Preliminary report of the development of Attitude Towards Aggression Scale (ATAS). *Aggressive Behavior*, 32, 44–53.

Jansen, G. J., Middel, B., Dassen, T. W., & Reijneveld, M. S. (2006). Cross cultural differences in psychiatric nurses' attitudes to inpatient aggression. *Archives of Psychiatric Nursing*, 20(2), 82–93. doi: S0883-9417(05)00285-2 [pii]10.1016/j.apnu.2005.08.012

Kraemer, H. C., & Thieman, S. (1987). *How many subjects? Statistical power analysis in research*. Newbury Park, CA: Sage.

Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet*, 360(9339), 1083–1088.

Lancaster, G. A., Whittington, R., Lane, S., Riley, D., & Meehan, C. (2008). Does the position of restraint of disturbed psychiatric patients have any association with staff and patient injuries? *Journal of Psychiatric and Mental Health Nursing*, 15, 306–312. doi: 10.1111/j.1365-2850.2007.01226.x

Minnick, A. F., Mion, L. C., Johnson, M. E., Catrambone, C., & Leipzig, R. (2007). Prevalence and variation of physical restraint use in acute care settings in the US. *Journal of Nursing Scholarship*, 39(1), 30–37. doi: 10.1111/j.1547-5069.2007.00140.x

Möhler, R., Richter, T., Köpke, S., & Meyer, G. (2011). Interventions for preventing and reducing the use of physical restraints in long-term geriatric care. doi: 10.1002/14651858.CD007546.pub2.). (Art. No.: CD007546)

Mohr, W. K., Petti, T. A., & Mohr, B. D. (2003). Adverse effects associated with physical restraint. *Canadian Journal of Psychiatry*, 48, 330–337.

Moore, K., & Haralambous, B. (2007). Barriers to reducing the use of restraints in residential elder care facilities. *Journal of Advanced Nursing*, 58, 532–540. doi: 10.1111/j.1365-2648.2007.04298.x

Morrison, E. F. (1998). The culture of caregiving and aggression in psychiatric settings. *Archives of Psychiatric Nursing*, 12(1), 21–31.

Moylan, L. B. (2009). Physical restraint in aged care psychiatry: A humanistic and realistic nursing approach. *Journal of Psychosocial Nursing and Mental Health Services*, 47(3), 41–47. doi: 10.3928/02793695-20090301-10

Nakahira, M., Moyle, W., Creedy, D., & Hitomi, H. (2009). Attitudes toward dementia-related aggression among staff in Japanese aged care settings. *Journal of Clinical Nursing*, 18(6), 807–816. doi: 10.1111/j.1365-2702.2008.02479.x

National Institute for Health and Clinical Excellence. (2011). Dementia: The NICE-SCIE guidelines on supporting people with dementia and their carers in health and social care (National Clinical Practice Clinical Guideline, Number 42). London, UK: The British Psychological Society & Gaskell.

- Needham, I., Abderhalden, C., Halfens, R. J., Dassen, T., Haug, H. J., & Fischer, J. E. (2005). The effect of a training course in aggression management on mental health nurses' perceptions of aggression: A cluster randomised controlled trial. [Clinical Trial Multicenter Study Randomized Controlled Trial Research Support, Non-U.S. Gov't]. *International Journal of Nursing Studies*, 42(6), 649–655. doi: 10.1016/j.ijnurstu.2004.10.003
- Owen, C., Tarantello, C., Jones, M., & Tennant, C. (1998). Violence and aggression in psychiatric units. *Psychiatric Services*, 49(11), 1452–1457.
- Pallant, J. (2011). *SPSS survival manual: A step by step guide to data analysis using the SPSS program* (4th ed.). Sydney, Australia: Allen & Unwin.
- Papadopoulos, C., Ross, J., Stewart, D., Dack, C., James, K., & Bowers, L. (2012). The antecedents of violence and aggression within psychiatric inpatient settings. [Meta-Analysis Research Support, Non-U.S. Gov't Review]. *Acta Psychiatrica Scandinavica*, 125(6), 425–439. doi: 10.1111/j.1600-0447.2012.01827.x
- Patel, V., & Hope, R. A. (1992). A rating scale for aggressive behaviour in the elderly—the RAGE. *Psychological Medicine*, 22(1), 211–221.
- Patterson, T. L., & Grant, I. (2003). Interventions for caregiving in dementia: Physical outcomes. *Current Opinion in Psychiatry*, 16(6), 629–633.
- Pulsford, D., Crumpton, A., Baker, A., Wilkins, T., Wright, K., & Duxbury, J. (2013). Aggression in a high secure hospital: Staff and patient attitudes. *Journal of Psychiatric and Mental Health Nursing*, 20, 296–304. doi: 10.1111/j.1365-2850.2012.01908.x
- Pulsford, D., Duxbury, J. A., & Hadi, M. (2011). A survey of staff attitudes and responses to people with dementia who are aggressive in residential care settings. *Journal of Psychiatric and Mental Health Nursing*, 18(2), 97–104. doi: 10.1111/j.1365-2850.2010.01646.x
- R Development Core Team. (2011). *R: A language and environment for statistical computing*. Vienna, Austria: R Foundation for Statistical Computing.
- Royal College of Psychiatrists' Centre for Quality Improvement. (2008). *The Healthcare Commission National Audit of Violence 2006–7. Final report—Older people's services*. London, UK: Royal College of Psychiatrists.

Scanlan, J.N. (2010). Interventions to reduce the use of seclusion and restraint in inpatient psychiatric settings: What we know so far: a review of the literature. *International Journal of Social Psychiatry*, 56(4), 412–423.

Stubbs, B. (2009). The manual handling of the aggressive patient: A review of the risk of injury to nurses. *Journal of Psychiatric and Mental Health Nursing*, 16, 395–400. doi: 10.1111/j.1365-2850.2008.01354.x

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston, MA: Pearson Education.

Te Pou. (2008). *Developing alternatives to the use of seclusion and restraint in New Zealand mental health inpatient settings*. Auckland, New Zealand:

Te Pou, The National Centre of Mental Health Research, Information and Workforce Development.

TABLE 1**Application of Bronfenbrenner's (2005) Bio-Ecological Systems Theory to Aggression in Acute Old Age Psychiatry Inpatient Settings**

System	Illustration
Microsystem	The person's interactions with others in the inpatient unit; for example, restricting the elderly person's ability to communicate with other patients.
Mesosystem	The interaction of two or more microsystems; for example, interaction of the elderly person's previous life experience of aggression with the measures staff take to prevent aggression in the inpatient unit.
Exosystem	An extension of the mesosystem, where external influences affect aggression indirectly; for example, the impact of the healthcare agency's policies about aggression in the inpatient unit.
Macrosystem	The influence of broader socio-cultural influences on aggression; for example, societal norms about whether aggression is acceptable can influence the onset of aggression in the inpatient unit.
Chronosystem	Progression of external environmental systems and events over time that may contribute to aggression in the elderly person; for example, socio-historical influences, life experiences, and transitions and how these may affect the onset of aggression in the inpatient unit.

TABLE 2**Post Hoc Comparisons for MAVAS by Age**

Scale	Age (years)	Estimate	Std. Error	Lower Bound	Upper Bound
	Comparison				
All	30-39 with <30	-0.147	0.100	-0.418	0.124
	40-49 with <30	0.119	0.094	-0.136	0.374
	≥ 50 with <30	0.102	0.091	-0.144	0.348
	40-49 with 30-39	0.267	0.091	0.021	0.513
	≥ 50 with 30-39	0.249	0.087	0.013	0.485
	≥ 50 with 40-49	-0.119	0.081	-0.338	0.100
Management	30-39 with <30	-0.131	0.091	-0.377	0.115
	40-49 with <30	0.156	0.086	-0.077	0.389
	≥ 50 with <30	0.083	0.083	-0.142	0.308
	40-49 with 30-39	0.287	0.083	0.062	0.512
	≥ 50 with 30-39	0.214	0.080	-0.003	0.431
	≥ 50 with 40-49	-0.156	0.074	-0.356	0.044
Bonferroni 95% Confidence Interval					

TABLE 3
Mean and *SD* for MAVAS by Highest Level of Education

	Tertiary (<i>n</i> = 53)		TAFE (<i>n</i> = 15)		High School (<i>n</i> = 16)	
	Mean	<i>SD</i>	Mean	<i>SD</i>	Mean	<i>SD</i>
All	2.2	0.3	2.2	0.3	2.5	0.2
Internal	2.6	0.4	2.7	0.4	2.5	0.4
External	1.9	0.6	1.9	0.6	2.4	0.3
Situational/Interactional	2.0	0.5	2.0	0.4	2.5	0.2
Management	2.2	0.3	2.3	0.2	2.5	0.2

TABLE 4
Post Hoc Comparisons for MAVAS by Education

Scale	Education Comparison	Estimate	Std. Error	Lower Bound	Upper Bound
All	TAFE with High school	- 0.263	0.101	- 0.51	- 0.016
	Tertiary with High school	- 0.278	0.080	- 0.474	- 0.082
	Tertiary with TAFE	- 0.015	0.083	- 0.218	0.188
External	TAFE with High school	- 0.549	0.206	-1.053	- 0.045
	Tertiary with High school	- 0.532	0.164	- 0.933	- 0.131
	Tertiary with TAFE	0.017	0.168	- 0.394	0.428
Situational/Interactional	TAFE with High school	- 0.566	0.148	- 0.928	- 0.204
	Tertiary with High school	- 0.482	0.118	- 0.770	- 0.194
	Tertiary with TAFE	- 0.342	0.120	- 0.635	- 0.049
Management	TAFE with High school	- 0.202	0.095	- 0.434	- 0.016
	Tertiary with High school	- 0.251	0.076	- 0.437	- 0.065
	Tertiary with TAFE	- 0.049	0.078	- 0.240	0.142

Bonferroni 95% Confidence Interval

TABLE 5
Post Hoc Comparisons for MAVAS by Place of Work (Unit)

Scale	Unit Comparison	Estimate	Std. Error	Lower Bound	Upper Bound
All	2 with 1	0.188	0.084	- 0.017	0.393
	3 with 1	0.004	0.074	- 0.177	0.185
	3 with 2	- 0.184	0.078	- 0.375	0.007
External	2 with 1	0.455	0.169	0.042	0.868
	3 with 1	0.113	0.149	- 0.251	0.477
	3 with 2	- 0.342	0.157	- 0.726	0.042
Cultural/Gender	2 with 1	0.500	0.203	0.004	0.996
	3 with 1	0.068	0.179	- 0.369	0.505
	3 with 2	- 0.432	0.189	- 0.894	0.030
Bonferroni 95% Confidence Interval					